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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,394	06/02/2006	Satoshi Aoyama	128094	3772

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EXAMINER	
MARTIN, ANGELA J	

ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
06/09/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,394	AOYAMA ET AL.	
	Examiner	Art Unit	
	ANGELA J. MARTIN	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is responsive to the Amendment filed on June 2, 2009. The Applicant has amended claims 1-21. However, the rejection is made final for the following reasons of record.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al., EP 0621648 A2.

Ikeda et al., teach a manufacturing method of a fuel cell (0006), which comprises a hydrogen-permeable metal layer of a hydrogen-permeable metal and an electrolyte layer that is located on the hydrogen-permeable metal layer and has proton conductivity (Example 3), said manufacturing method comprising: forming a thin electrolyte layer on the hydrogen-permeable metal layer, wherein the electrolyte layer has pores (p. 8, lines 40-55); and forming a conductive layer on the formed thin electrolyte layer electronically-discontinued with the hydrogen-permeable metal layer via the pores, wherein the conductive layer has electrical conductivity (Example 3). A manufacturing method in accordance with claim 1, wherein the conductive layer is an electrode

(abstract). A manufacturing method in accordance with claim 1, wherein said forming a conductive layer is implemented by releasing a conductive material toward the thin electrolyte layer in a direction perpendicular to the thin electrolyte layer, so as to form the conductive layer that is thinner than the thin electrolyte layer (p. 2, lines 35-52). A manufacturing method in accordance with claim 1, wherein said forming a conductive layer is implemented by releasing a conductive material toward the thin electrolyte layer at a specific angle that prevents the conductive material from being deposited on surface of the hydrogen-permeable metal layer, which is exposed on the pores present in the thin electrolyte layer, so as to form the conductive layer (p. 2, lines 53-58, p. 1, line1). A manufacturing method in accordance with claim 3, wherein said forming a conductive layer is implemented by adopting a vacuum deposition technique to form the conductive layer (p. 3, lines 45-58). A manufacturing method in accordance with claim 1, wherein said forming a conductive layer is implemented by applying a paste, which contains an electrically conductive material and has a predetermined level of viscosity for effectively preventing invasion of the paste into the pores present in the thin electrolyte layer, onto the thin electrolyte layer, so as to form the conductive layer (Example 3). A manufacturing method in accordance with claim 1, wherein said forming a conductive layer comprises: forming a conductive film of an electrically conductive material; and transferring the conductive film onto the thin electrolyte layer, so as to form the conductive layer (Example 3). A fuel cell comprising a hydrogen-permeable metal layer of a hydrogen-permeable metal and an thin electrolyte layer that is located on the hydrogen-permeable metal layer and has proton conductivity, said fuel cell being

manufactured by a manufacturing method in accordance with claim 1 (abstract). Ikeda et al., teach a manufacturing method in accordance with claim 6, wherein said forming a dielectric layer is implemented by coating inside of the pores of the thin electrolyte layer with an insulating material by plating to form the dielectric layer (p. 8, Example 3) . A manufacturing method in accordance with claim 6, wherein said forming a dielectric layer further comprises: coating inside of the pores of the thin electrolyte layer with a metal, which is oxidized to an insulating material, to form a metal coat layer; and oxidizing the metal coat layer to form the dielectric layer (p. 8, lines 40-55). A manufacturing method in accordance with claim 1, wherein said forming the conductive layer further comprises: forming a dielectric layer in the pores present in the thin electrolyte layer, wherein the dielectric layer is mainly made of an insulating material and blocks off a connection between surface of the hydrogen-permeable metal layer, which is exposed on the pores present in the thin electrolyte layer, and outside of the pores; and coating the thin electrolyte layer and the dielectric layer formed in the pores of the thin electrolyte layer with the conductive layer (p. 8, Example 3). A manufacturing method in accordance with claim 6, wherein said forming a dielectric layer is implemented by filling the pores of the thin electrolyte layer with dielectric fine particles to form the dielectric layer (p. 6, lines 44-55). A manufacturing method in accordance with claim 1, wherein said forming a conductive layer comprises: filling the pores present in the thin electrolyte layer with fine particles; forming the conductive layer on the thin electrolyte layer having the pores filled with the fine particles; and removing the fine particles from the pores, subsequent to said forming the conductive layer on the

thin electrolyte layer (p. 7, lines 10-48). A manufacturing method in accordance with claim 10, wherein said removing the fine particles is implemented by adopting a physical technique to remove the fine particles (p. 7, lines 10-48). A manufacturing method in accordance with claim 1, wherein said forming a conductive layer comprises: forming a protective layer to cover the thin electrolyte layer; and forming the conductive layer on the protective layer (p. 3, lines 39-54). A manufacturing method in accordance with claim 13, wherein the protective layer is mainly made of an insulating material having proton conductivity (p. 3, lines 39-54). A manufacturing method in accordance with claim 16, wherein said forming a conductive layer is implemented by adopting one of arc ion plating, emulsion deposition, and cluster beam deposition techniques to coat the thin electrolyte layer with the electrically conductive material (Preparation 1). A manufacturing method in accordance with claim 1 wherein said forming a conductive layer is implemented by adopting one of arc ion plating,emulsion deposition, and cluster beam deposition techniques to coat the thin electrolyte layer with the electrically conductive material (Preparation 1). A manufacturing method in accordance with claim 1, wherein said forming a conductive layer is implemented by applying a paste, which contains an electrically conductive material and has a predetermined level of viscosity for effectively preventing invasion of the paste into the pores present in the thin electrolyte layer, onto the thin electrolyte layer, so as to form the conductive layer (Preparation 1-3). A manufacturing method in accordance with claim 1,wherein said forming a conductive layer comprises: forming a conductive film of an electrically conductive material; and transferring the conductive film onto the thin electrolyte layer,

so as to form the conductive layer (Example 3). A fuel cell comprising a hydrogen-permeable metal layer of a hydrogen-permeable metal and an thin electrolyte layer that is located on the hydrogen-permeable metal layer and has proton conductivity, said fuel cell being manufactured by a manufacturing method in accordance with claim 1 (Example 3). A manufacturing method in accordance with claim 1, wherein the pores are through-holes (p. 3, lines 53-57 and p. 3, line 1).

Thus, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because although the prior art of record does not recite coating in the pores, the deposition of the materials would provide a coating of the pores. Additionally, Ikeda et al., teach the same deposition techniques as the application, such as sputtering or ion plating or vacuum deposition (physical vapor deposition) (p. 2, lines 39-48). Therefore, because the same deposition process is performed, a conductive layer on the electrolyte would be formed, such that a portion of the layer is discrete from a portion of the layer formed inside the pores of the electrolyte layer.

Response to Arguments

3. Applicant's arguments filed 2/6/09 have been fully considered but they are not persuasive. Applicant argues that Ikeda does not disclose “forming a conductive layer on the electrolyte layer such that the conductive layer formed on the electrolyte layer is discrete from the conductive layer formed inside the pores of the electrolyte layer.” However, as described above, Ikeda et al., teach the same deposition techniques as the application, such as sputtering or ion plating or vacuum deposition (physical vapor

deposition) (p. 2, lines 39-48). Therefore, because the same deposition process is performed, a conductive layer on the electrolyte would be formed, such that a portion of the layer is discrete from a portion of the layer formed inside the pores of the electrolyte layer.

Conclusion

4. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela J. Martin whose telephone number is 571-272-1288. The examiner can normally be reached on Monday-Friday from 10:00 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AJM
Examiner, Art Unit 1795

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795